



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/568,699

09/29/2006

Nicolaas A. De Munck

2003M091

7132

23455 7590 12/23/2008
EXXONMOBIL CHEMICAL COMPANY
5200 BAYWAY DRIVE
P.O. BOX 2149
BAYTOWN, TX 77522-2149

EXAMINER

HEINCER, LIAM J

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

12/23/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/568,699	Applicant(s) DE MUNCK ET AL.	
	Examiner Liam J. Heincer	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 10-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Godwin et al. (US Pat. 4,543,420) in view of Schlosberg et al. (US Pat. 4,543,420). Considering Claim 10 and 15, 17, 18, 20, 22-24: Godwin et al. teaches a process for preparing a plasticizer ester (1:7-10) comprising esterifying a polybasic aromatic carboxylic acid or anhydride with an acid having nine or ten carbon atoms (3:20-30); treating the ester with a base; stripping the liquid product; adding powdered/activated carbon/an adsorbent and clay/a filter aid to the liquid; and filtering the product (Example 1).

Godwin et al. does not teach filtering the crude ester to remove a liquid product and then stripping the liquid product before the purification steps. However, Schlosberg et al. does teach the filtration of solids from the ester mixture and then removal of excess alcohol by steam stripping before the final filtration (purifying) steps (Col. 6, lines

Art Unit: 1796

1-5). Godwin et al. and Schlosberg et al. are analogous art because they are from the same field of endeavor, namely that of processes for making plasticizer esters. At the time of the invention, a person of ordinary skill in the art would have found it obvious to include the steps of filtration of solids from the ester mixture and then removal of excess alcohol by steam stripping, as taught by Schlosberg et al., in the overall process, as taught by Godwin et al., and would have been motivated to do so because an extra filtration step can enhance the purity of the plasticizer ester as well as enhancing its properties.

Considering claims 11 and 12: Godwin et al. teaches the base as being caustic/sodium hydroxide (Example 1).

Considering Claim 13: Godwin et al. teaches separating the aqueous and organic phases/removing water (Example 1).

Considering Claim 14: Godwin et al. does not teach the initial removal of water as being done by stripping or flashing. However, Schlosberg et al. teaches using a flash step to remove water prior to filtering and stripping (5:66-67). It would have been obvious to a person having ordinary skill in the art at the time of invention to have used the flash technique of Schlosberg et al. in the process of Godwin et al., and the motivation to do so would have been, it is a known technique for separating the water and organic phases during the production of plasticizer esters.

Considering Claim 16: Godwin et al. does not teach using phthalic anhydride. However, Schlosberg et al. teaches a plasticizer made from an esterification reaction between phthalic anhydride and an alcohol (Example 1). It would have been obvious to a person having ordinary skill in the art at the time of invention to have used the phthalic anhydride of Schlosberg et al. in the process of Godwin et al., and the motivation to do so would have been, as Schlosberg et al. suggests, phthalate esters have high oxidative stability (Example 1).

Considering Claim 19: Godwin et al. teaches the filter aid and adsorbent as being used in a combined amount of 0.3 wt percent (Example 1).

Considering Claim 21: Godwin et al. teaches the mixture of filter aid and adsorbent as being 67 weight percent filter aid and 33 weight percent adsorbent (Example 1).

Art Unit: 1796

Considering Claim 25: Clay will act as both a filter aid and an absorbent material, as evidenced by Schlosberg et al. (6:9-11).

Considering Claims 26-27: Godwin et al. teaches the adsorbent as being added at 95 °C (Example 1).

Considering Claims 28 and 29: Godwin et al. teaches the adsorbent as being added at 95 °C (Example 1).

Godwin et al. does not teach using phthalic anhydride. However, Schlosberg et al. teaches a plasticizer made from an esterification reaction between phthalic anhydride and an alcohol (Example 1). It would have been obvious to a person having ordinary skill in the art at the time of invention to have used the phthalic anhydride of Schlosberg et al. in the process of Godwin et al., and the motivation to do so would have been, as Schlosberg et al. suggests, phthalate esters have high oxidative stability (Example 1).

The Office recognizes that all of the claimed effects and physical properties are not positively stated by the reference. However, the reference teaches all of the claimed ingredients. Therefore, the claimed effects and physical properties would implicitly be achieved by combining the disclosed ingredients. If it is applicant's position that this would not be the case: (1) evidence would need to be presented to support applicant's position; and (2) it would be the examiner's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties and effects by combining only these ingredients.

Claims 10-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ageishi et al. (5,880,310) in view of Schlosberg et al. (5,798,319).

Regarding claim 10, Ageishi et al. teaches a process for producing plasticizer esters comprising (Col. 1, lines 6-7) esterifying an acid or an anhydride (Col. 3, lines 27-28) with an alcohol containing from 6 to 13 carbon atoms to form a crude ester (Col. 3, lines 41-44) and then treating it with a base solution (Col. 3, lines 54-55). The crude ester is purified through a combination of fine filtration using a filter aid and adsorption treatment (Col. 5, lines 8-11).

Ageishi et al. does not teach filtering the crude ester to remove a liquid product and then stripping the liquid product before the purification steps. However, Schlosberg et al. does teach the filtration of solids from the ester mixture and then removal of excess alcohol by steam stripping before the final filtration (purifying) steps (Col. 6, lines 1-5). Ageishi et al. and Schlosberg et al. are analogous art because they are from the same field of endeavor, namely that of process for making plasticizer esters. At the time of the invention, a person of ordinary skill in the art would have found it obvious to include the steps of filtration of solids from the ester mixture and then removal of excess alcohol by steam stripping, as taught by Schlosberg et al., in the overall process, as taught by Ageishi et al., and would have been motivated to do so because an extra filtration step can enhance the purity of the plasticizer ester as well as enhancing its properties.

Regarding claims 11-12, Ageishi et al. additionally teaches that the base solution used in the process is an alkali metal salt, such as sodium hydroxide (Col. 6, lines 9-10).

Regarding claims 13-14, Ageishi et al. does not teach the process step of removing the water from the ester before the first filtering step by flashing or steam stripping. However, Schlosberg et al. does teach the removal of the water through heat and vacuum in a flash step (Col. 5, lines 66-67) before the first filtration. At the time of the invention, a person of ordinary skill in the art would have found it obvious to use the above step of removing the water before the first filtration, as taught by Schlosberg et al., in the overall process, as taught by Ageishi et al., and would have been motivated to do so in order to facilitate the ease of the first filtration step.

Regarding claims 15-16, Ageishi et al. additionally teaches that the acid or anhydride can be aromatic monocarboxylic acids or anhydrides and polybasic aromatic carboxylic acids and anhydrides, such as phthalic anhydride (Col. 3, lines 25-30).

Regarding claims 17-18, Ageishi et al. additionally teaches that the alcohol is a C₉ to C₁₁ alcohol, preferably a C₁₀ or C₁₁ alcohol (Col. 3, lines 40-45).

Regarding claim 19, Ageishi et al. does not teach that the adsorbent and the filter aid are used in amounts from about 0.01 to about 5 weight percent based on the weight

Art Unit: 1796

of the ester. However, it is well known in the art to change result effective variables, such as the amounts of additives used in a process to make a composition (MPEP §2144.05). At the time of the invention, a person of ordinary skill in the art would have found it obvious to optimize the amount of adsorbent and filter aid used in the process to make a plasticizer ester through routine experiment, and would have been motivated to do so in order to determine the optimum amount of these additives needed to effect an efficient filtration to produce a plasticizer ester having the desired properties.

Regarding claim 20, Ageishi et al. additionally teaches that the final filtration can be performed by simultaneously conducting adsorption and filtration using a filter aid and an adsorbent (Col. 6, lines 55-60).

Regarding claim 21, Ageishi et al. does not teach that the mixture of filter aid and adsorbent used in the process is from about 90 to about 30 parts by weight of the filter aid and from about 10 to about 70 parts by weight of the adsorbent. However, it is well known in the art to change result effective variables, such as the amounts of additives used in a process to make a composition (MPEP §2144.05). At the time of the invention, a person of ordinary skill in the art would have found it obvious to optimize the amount of adsorbent and filter aid used in the process to make a plasticizer ester through routine experimentation, and would have been motivated to do so in order to determine the optimum amount of these additives needed to effect an efficient filtration to produce a plasticizer ester having the desired properties.

Regarding claim 22-25, Ageishi et al. additionally teaches that the adsorbent used can be activated carbon (Col. 5, lines 10-15). Ageishi et al. does not teach that the filter aid is a clay or that the adsorbent also acts as the filter aid. However, Schlosberg et al. does teach that the adsorbent/filter aid can be clay (Col. 5, lines 55-60). At the time of the invention, a person of ordinary skill in the art would have found it obvious to use clay as filter aid/adsorbent, as taught by Schlosberg et al., in the overall process, as taught by Ageishi et al., and would have been motivated to do so because it is a common filter aid/adsorbent used in these processes and it is a naturally occurring material which makes it more economical than other choices.

Regarding claims 26-27, Ageishi et al. additionally teaches that the adsorption temperature and the filtration temperature are generally between 30° C and 120° C (Col. 5, lines 40-45).

Regarding claim 28, Ageishi et al. additionally teaches that the adsorption temperature and the filtration temperature are generally between 30° C and 120° C (Col. 5, lines 40-45) and that the plasticizer is a C₈ to C₁₃ dialkyl phthalate (using the specified alcohols and phthalic anhydride will produce these) (Col. 3, lines 25-45).

Regarding claim 29, Ageishi et al. additionally teaches that the plasticizer ester is a di-alkyl phthalate (using the specified alcohols and phthalic anhydride will produce these) (Col. 3, lines 25-45).

The Office recognizes that all of the claimed effects and physical properties are not positively stated by the reference. However, the reference teaches all of the claimed ingredients. Therefore, the claimed effects and physical properties would inherently be achieved by combining the disclosed ingredients. If it is applicant's position that this would not be the case: (1) evidence would need to be presented to support applicant's position; and (2) it would be the examiner's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties and effects by combining only these ingredients.

Regarding claim 30, Ageishi et al. additionally teaches using this plasticizer to plasticize a vinyl chloride resin (Col. 1, lines 5-10).

Regarding claim 31, Ageishi et al. additionally teaches using this composition as an insulating material for things like a wire cable (Col. 1, lines 10-15).

Response to Arguments

Applicant's arguments filed October 24, 2008 have been fully considered but they are not persuasive, because:

A) Applicants assertion that an agreement had been reached on allowability based on the light ends limitation is not accurate. As shown on the interview summary form, it was agreed that the limitation "appears to overcome the *applied* art" (Emphasis added). However, the applicant was reminded that a further search would be required.

Art Unit: 1796

See Interview Summary, May 19, 2008. It was during this new search that the newly applied art was found.

B) Applicants argument that the references of record do not teach excluding stripping prior to filtering is not persuasive. The instant claims are directed to a process comprising the claimed steps. "The transition 'comprising' in a method claim indicates that the claim is open-ended and allows for additional steps." *Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997). Therefore the prohibition on stripping prior to the first filtration is not present in the instant claims.

Additionally, the applicant has asserted in their arguments that filtering the solution prior to a stripping step is "the heart of the invention as taught by the specification" (Applicants arguments, 10/24/08, page 6). Specifically, the applicant assert that the removal of water in Scholsbeg et al. prior to filtration is prohibited by the teaching of the specification. This is not supported by the original specification or the current claims.

First, the applicant is currently claiming a step where "the water is removed by flashing or steam stripping" (Claim 14) and that the water removal occurs "before filtering step (iii)" (Claim 14). If the heart of the invention were in fact that the filtering step occurs prior to any stripping step, then the applicant is claiming a process that does not fall within the scope of their invention. Additionally, the original specification claims that the selection of absorbent and purification conditions are the most important features for obtaining the plasticizer with the desired properties (¶0038-39), not the avoidance of stripping prior to the filtration..

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

Art Unit: 1796

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liam J. Heincer whose telephone number is 571-270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/

Supervisory Patent Examiner, Art Unit 1796

LJH

December 18, 2008